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Nipponomysis patula sp. nov. (Crustacea: Mysidacea: Mysidae) from the Gulf of Thailand

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Nipponomysis patula sp. nov. is described from the Gulf of Thailand. This species is characterized by having an expanded inner lobe on the second segment of the mandibular palp and is easily distinguishable from the other species of *Nipponomysis*. This is the first record of *Nipponomysis* from the Gulf of Thailand.
Key Words: Crustacea, Mysidacea, *Nipponomysis*, new species, Gulf of Thailand.

Introduction

The genus *Nipponomysis* was established by Takahashi and Murano (1986) to accommodate 16 species of mysid from Asian waters, and it currently comprises 18 species by the addition of *N. minuta* Fukuoka and Murano, 1997 and *N. brevicauda* Fukuoka and Murano, 2001. These species have been recorded from temperate regions except for four tropical and subtropical species: *N. quadrispinosa* (Ii, 1964) from off western Kalimantan, Indonesia (Ii 1964), and off Guandong, southern China (Wang 1981); *N. sinensis* (Wang, 1981) from off Guandong (Wang 1981); *N. minuta* from Iriomote Island, Ryukyu Islands, southwestern Japan (Fukuoka and Murano 1997); and *N. brevicauda* from Haha-jima Island, Ogasawara Islands, southern Japan (Fukuoka and Murano 2001).

During a preliminary survey of the copepod and mysid fauna of the Gulf of Thailand directed by Dr. S. Ohtsuka, an undescribed species belonging to *Nipponomysis* was collected from the shallow water of Samet Island in the northern part of the gulf. It was reported under the name of *Nipponomysis* sp. for the sake of convenience (Pinkaew *et al.* 2001). In the Gulf of Thailand, only seven species of mysid have been recorded (Hansen 1910; Murano 1986) and no species of *Nipponomysis* has been recorded to date.

In this paper, a new species, *Nipponomysis patula*, is described from the Gulf of Thailand. Body length is measured from the tip of the rostrum to the distal end of the telson, excluding spines. The type specimens are deposited in the National Science Museum, Tokyo (NSMT).

Subfamily **Mysinae**
Tribe **Mysini**
Nipponomysis patula sp. nov.
(Figs 1–3)

Nipponomysis sp.: Pinkaew *et al.* 2001: 260, 261, fig. 9.

Material examined. Holotype (NSMT-Cr 14731): male (3.5 mm), Sai Kaew Beach, Samet Island, Gulf of Thailand, >1.5 m depth, sledge net, daytime, 24 Mar. 2000, coll. S. Ohtsuka. Paratypes (NSMT-Cr 14732): 1 male (2.8 mm) and 4 females (4.0–4.2 mm), same data as holotype. Paratypes (NSMT-Cr 14733): 3 males (3.8–4.1 mm) and 8 females (3.3–4.2 mm), Ao Praow, Samet Island, Gulf of Thailand, >1.5 m depth, sledge net, daytime, 25 Mar. 2000, coll. S. Ohtsuka.

Description. Body smooth. Abdominal somites without spines or folds; sixth somite twice as long as fifth.

Carapace with low, triangular rostrum with rounded apex not extending to base of antennular peduncles; lateral margins of rostrum concave (Fig. 1A, B); anterolateral corner of carapace rounded; posterior margin emarginate, exposing last 4 or 5 thoracic somites dorsally.

Eye slightly depressed dorsoventrally, 1.1–1.2 times as long as broad in dorsal view; cornea occupying one-third to two-fifths of eye in dorsal view; eyestalk without papilliform process (Fig. 1A, B).

Antennular peduncle of male more robust than that of female, first segment short, almost as long as broad, third segment 1.1 times as long as proximal two segments combined, with well developed appendix masculina (Fig. 1A); in female first segment 1.5 times as long as broad, third segment as long as first segment (Fig. 1B).

Antennal scale lanceolate with rounded apex, extending beyond distal end of antennular peduncle, not reaching apex of appendix masculina in male, 4 times as long as broad in male, 3.8 times as long as broad in female, armed with long, plumose, spiniform setae on entire margin; subapical suture marked off indistinctly (Fig. 1C, D). Antennal peduncle extending to five-sixths length of scale in male and to two-thirds length in female, second segment longest, 1.5 times as long as broad in male and 1.7 times as long as broad in female, third segment four-fifths length of second in male and three-fifths in female (Fig. 1C, D).

Labrum with forwardly directed, acute, spiniform process.

Mandibular palp 3-segmented; second segment with expanded membranous lobe over distal four-fifths of inner margin; lobe extending distally to proximal one-third to two-thirds of distal segment, armed with 6–9 small, spiniform processes arranged irregularly from middle to apex on inner margin; third segment three-fifths length of second in male and half length of latter in female (Fig. 1E–G).

Maxillule with inner lobe armed with 3 long, robust setae on apex and 5 slender setae on lateral margins; outer lobe expanded outwards in proximal half, armed with 10 robust spines on distal margin and 3 slender setae on posterior surface (Fig. 2A).

Maxilla with endopod 2-segmented; distal segment oval, 1.3 times as long as broad, armed with 6 long, rather robust setae on outer and apical margins and numerous slender setae on inner margin; exopod oval, extending to distal margin of proximal segment of endopod, armed with 12 long, plumose setae on outer and api-

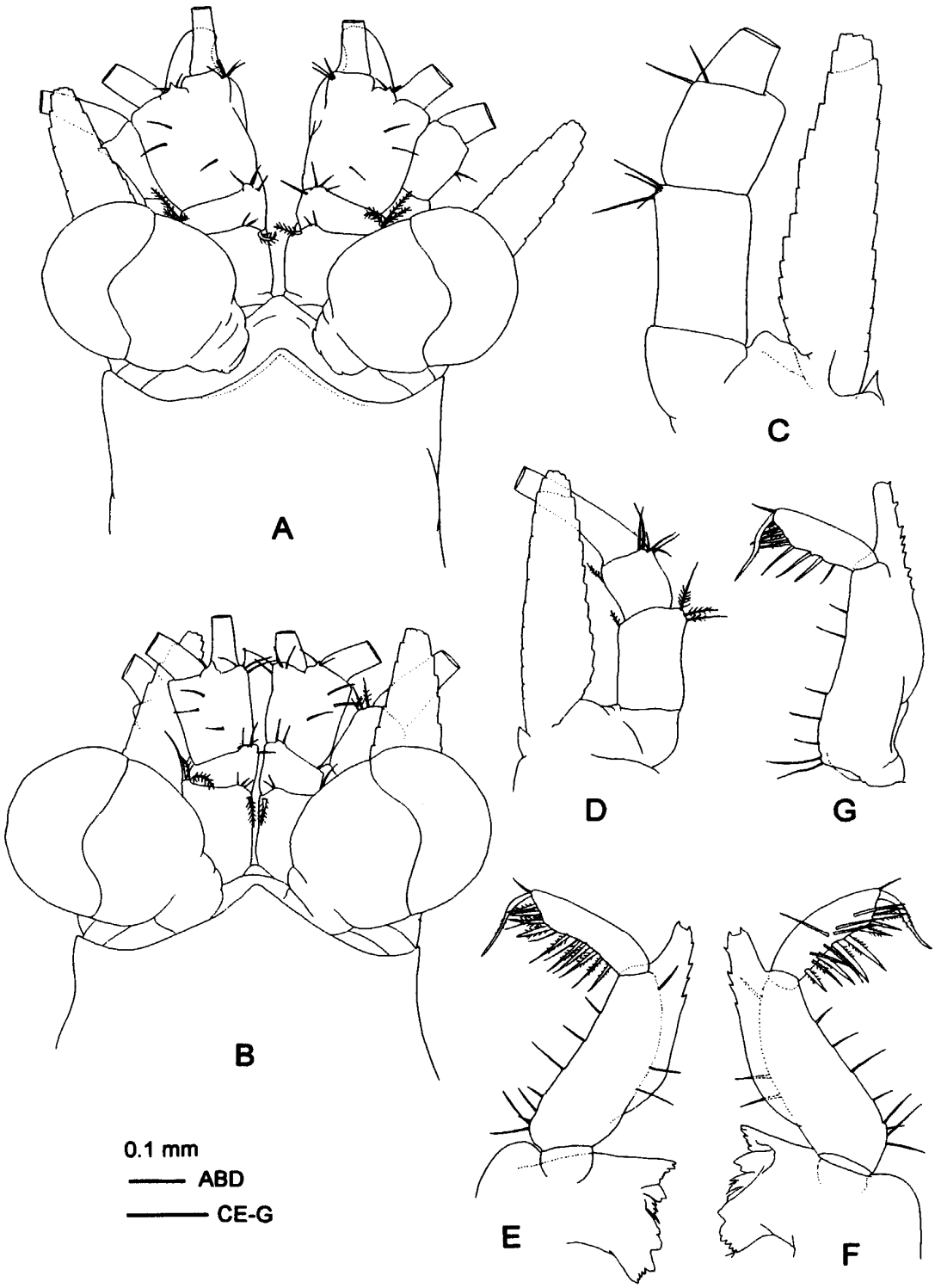

Fig. 1. *Nipponomysis patula* sp. nov. A, C, E, F, male (3.5 mm), holotype (NSMT-Cr 14731); B, D, G, female (4.0 mm), one individual of paratypes (NSMT-Cr 14732). A, B, anterior part of body, dorsal; C, antenna, ventral; D, antenna, dorsal; E, mandible, anterior; F, mandible, posterior; G, mandibular palp, anterior.

cal margins (Fig. 2B).

Endopod of first thoracic limb short and robust; preischium, ischium, and merus expanded inwards (Fig. 2C). Endopod of second thoracic limb robust; merus longest, 3 times as long as broad; carpopropodus two-thirds of merus in length (Fig. 2D). Endopod of third to eighth thoracic limbs long and slender; carpopropodus divided into 3 subsegments by transverse articulations, proximal subsegment longest, distal two subsegments subequal in length; dactylus small, with robust terminal claw (Fig. 2E). Exopod of thoracic limbs 8-segmented in first and eighth limbs and 9-segmented in second to seventh limbs; basal plate armed with small, spiniform process at outer distal angle in first to seventh limbs but smooth in eighth limb (Fig. 2C, D).

Penis 2.2 times as long as broad in lateral view, armed with 6 short and 3 long, slender setae on anterior margin, 4 medially curved setae on distal margin, and 3 long, plumose setae on posterior margin of distal half (Fig. 2F).

Female with developed oostegites on seventh and eighth thoracic limbs.

All pleopods, except fourth pair of male, reduced to uniramous, unsegmented lobes; first to third pleopods almost equal in length; fifth pleopod long, 1.7 times as long as third (Fig. 3A–C, E). Fourth pleopod of male biramous; endopod reduced to unsegmented lobe; exopod long, extending to near posterior end of last abdominal somite, 3-segmented: first segment long, comprising three-fourths of length of exopod, armed with 2 short setae on inner and outer distal angles; second segment short, one-eighth of first segment in length, armed with 2 short setae on inner and outer distal angles; third segment slightly longer than second, armed with 2 short setae and 2 long, robust setae, long setae subequal in length and 2.3 times as long as distal segment (Fig. 3D).

Endopod of uropod extending beyond telson but not to apex of apical spines of telson, armed with 4 or 5 spines in ventral statocyst region (Fig. 3F, G). Exopod of uropod slightly exceeding apex of apical spines of telson (Fig. 3G)

Telson long and triangular with dilated basal portion, 1.9 times as long as sixth abdominal somite, 2.2–2.3 times as long as broadest part at base. Lateral margin armed with 3 or 4 spines on basal dilated part, then an unarmed gap, then distal two-thirds to three-fourths of lateral margin armed densely with 8–11 clusters of spines, each cluster composed of 1 larger spine and 1–3 smaller spines; distalmost larger spines exceptionally long and strong, twice as long as other larger spines and 1.3 times longer than larger apical spines. Distal margin of telson armed with 2 pairs of spines, outer pair long and robust, twice as long as inner pair (Fig. 3G, H).

Etymology. The specific name is derived from Latin *patulus*, meaning expanded, from the expanded mandibular palp.

Remarks. *Nipponomysis patula* appears allied to *N. ornata* (Ii, 1964), *N. sinensis*, and *N. quadrispinosa* owing to the small number of spines on the endopod of the uropod and the shape and armature of the telson (Ii 1964; Wang 1981). It is distinguished from the latter three species by the unarmed part near the base of the telson and the expanded membranous lobe on the second segment of the mandibular palp. *Nipponomysis patula*, moreover, differs from *N. quadrispinosa* with respect to the exopod of the fourth pleopod of male: the distal two segments are each one-eighth the length of the proximal segment in *N. patula*, compared to four-ninths the length of the proximal segment in *N. quadrispinosa*.

Nipponomysis patula is easily distinguishable from all other species of the

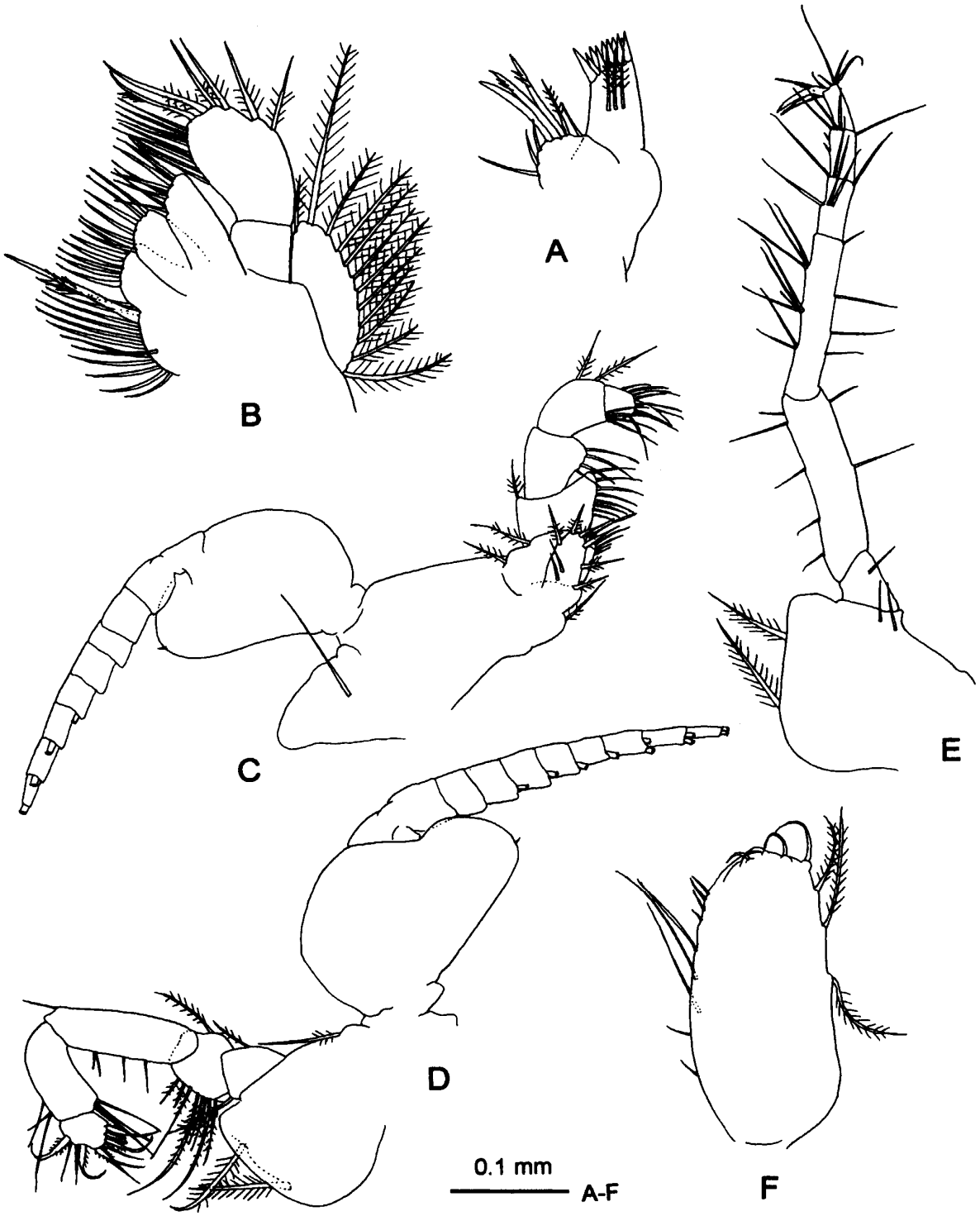

Fig. 2. *Nipponomysis patula* sp. nov. Male (3.5 mm), holotype (NSMT-Cr 14731). A, maxillule, posterior; B, maxilla, posterior; C, first thoracic limb, anterior; D, second thoracic limb, posterior; E, endopod of fourth thoracic limb, posterior; F, penis, lateral.

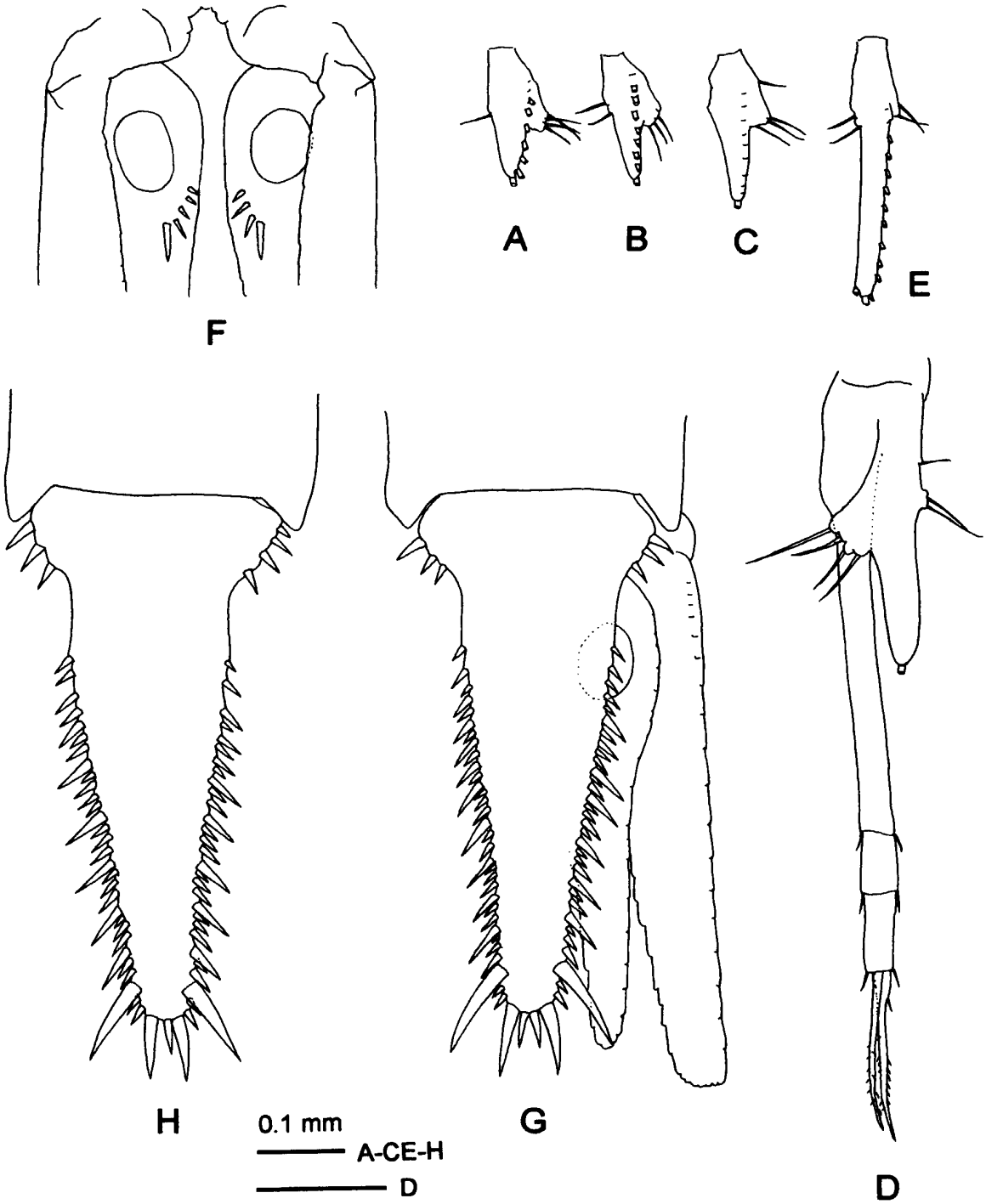

Fig. 3. *Nipponomysis patula* sp. nov. A–G, male (3.5 mm), holotype (NSMT-Cr 14731); H, female (4.0 mm), one individual of paratypes (NSMT-Cr 14732). A–C, first to third pleopods, anterior; D, fourth pleopod, posterior; E, fifth pleopod, anterior; F, basal part of uropod, ventral; G, telson and uropod, dorsal; H, telson, dorsal.

genus by the expanded inner lobe on the second segment of the mandibular palp. This species has the smallest body size among the species of *Nipponomysis*.

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